

A new species of *Dermomurex* (*Viator*) from northwestern Australia

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ABSTRACT

A new species of the muricid subgenus *Dermomurex* (*Viator*) is described from the Recent fauna at Broome, W.A. It differs from the three known species of the subgenus in the twisted siphonal canal and in details of the intritacalx.

INTRODUCTION

The muricid subgenus *Dermomurex* (*Viator*) was named (Vokes, 1974, p. 4) on the basis of one fossil species, *D. (V.) asteriscus* (Tate, 1888), and one Recent species, *D. (V.) antonius* Vokes, 1974. The group is distinguished from the closely related, and presumably ancestral, subgenus *Dermomurex* (*Takia*) by the relatively long, straight siphonal canal present in *Viator*, in contrast to a shorter, recurved siphonal canal in *Takia*. At the time of the original description I was of the belief that the Australian line was descended from an American fossil species, *Dermomurex* (*Takia*) *sexangulus* (Dall, 1915), giving reason to the name *Viator* (Latin — a traveler).

Subsequent work on previously unrecognized and/or new species of *Dermomurex* in the Recent and fossil record of Australia (Vokes, 1985), showed that the *Viator* line more probably is descended from the Janjukian (Late Oligocene) species *Dermomurex* (*Takia*) *imitator* (Vokes, 1985, p. 53, pl. 2, fig. 1). This species is not only of the same geologic age as the American *D. sexangulus*, but the morphology is very similar, indicating that both species probably are descended from an as-yet unknown common ancestor.

The subgenus *Takia* is first seen in two morphologically similar Early Oligocene species, one in the New World and one in the Old World: *D. (T.) cookei* Vokes, 1975, from Mississippi, and *D. (T.) cotteavi* (Meunier, 1880), from France. There are fossil species of various geologic ages known from throughout the world (United States, Europe, Java, and Australia; see Vokes, 1975, p. 130). Although the line persisted in the Mediterranean area through the Pliocene [*D. (T.) distinctus* (Cristofori and Jan, 1832)], today it occurs only in the Indian and Pacific Oceans with five living species: *D. (T.) infrons* Vokes, 1974 (type species), *D. (T.) bobyini* (Kosuge, 1984), *D. (T.) wareni* Houart, 1990, all from the western Pacific; *D. (T.) africanus* Vokes, 1977, from East Africa; and *D. (T.) myrakeenae* (Emerson and D'Attilio, 1970), from the eastern Pacific.

The Silverdale, North Carolina, locality at which the Late Oligocene species *D. (T.) sexangulus* occurs is unusual and seems to be more closely related to the European fauna than to other U.S. Atlantic and Gulf Coastal Plain deposits. It is assumed, therefore, that the extraordinarily similar American and Australian species were somehow linked through a European route.

In Australia, by the Early Miocene, the derivative subgenus *Viator* had branched off the ancestral line, as demonstrated by the presence of a second fossil species, *D. (V.) darraighi*



Text-figures 1-3. **Figure 1.** *Dermomurex (Viator) antonius* Vokes; WAM 3634-67 (holotype); height 25.7 mm, diameter 13.4 mm; locality, Dampier Archipelago, W.A. (X 2). **Figure 2.** *Dermomurex (Viator) pasi*, n. sp.; WAM 237-93 (holotype); height 18.0 mm, diameter 10.9 mm; locality, Broome, W.A., 12 meters (figs. 2a, 2b X 2; fig. 2c, 2d X 3). **Figure 3.** *Dermomurex (Viator) pasi*, Vokes, n. sp.; WAM 236-93 (paratype); height 14.9 mm, diameter 8.5 mm; locality, Broome, W.A., 12 meters (X 3).

(Vokes, 1985, p. 55, pl. 3, figs. 3, 4 [where it is incorrectly cited as *Dermomurex (Takia) darraghi*]), described from the Longfordian-Batesfordian (Early Miocene) Gellibrand Clay. Until now, the subgenus *Viator* included only the two fossil species and the Recent type but additional collecting has produced a second Recent species of this subgenus, living in the same general geographic area as *D. (V.) antonius*, northwestern Australia.

SYSTEMATICS

Family Muricidae Rafinesque, 1815

Subfamily Muricinae Rafinesque, 1815

Genus *Dermomurex* Monterosato, 1890

Dermomurex Monterosato, 1890, Natural. Sicil., v. 9, p. 181. New name for *Poweria* Monterosato, 1884, *non* Bonaparte, 1840.

Type species: *Murex scalarinus* Bivona-Bernardi, 1832, = *Murex scalaroides* Blainville, 1829 (o.d.).

Subgenus *Viator* Vokes 1974

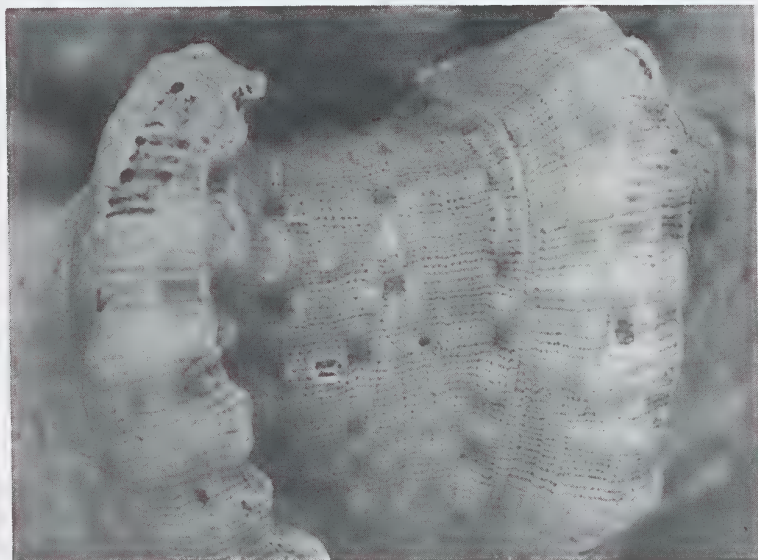
Viator Vokes, 1974, J. Malac. Soc. Australia, v. 3, no. 1, p. 4.

Type species: *Dermomurex (Viator) antonius* Vokes, 1974 (o.d.)

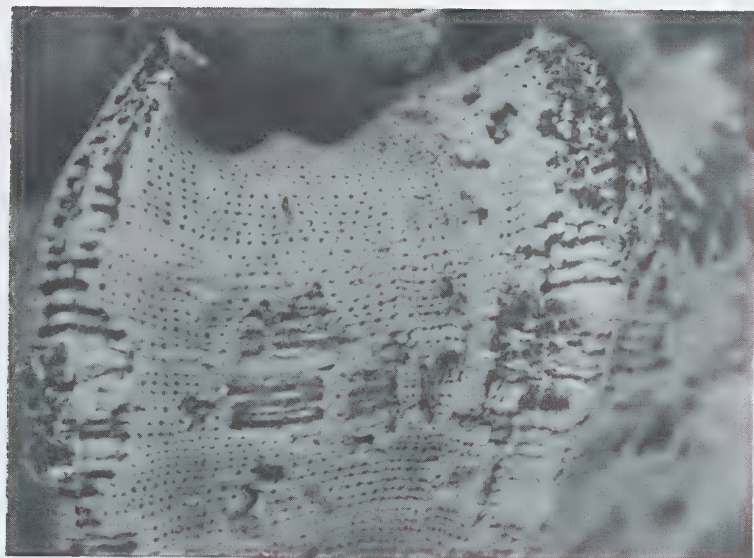
***Dermomurex (Viator) pasi* Vokes, n. sp.**

Text-figures 2-4

Description: Adult shell small (maximum length about 20 mm); five teleoconch whorls; protoconch of one and one-half smooth, bulbous whorls. Onset of teleoconch marked by presence of intritacalx. All spiral ornamentation developed in intritacalx only; when removed, shell almost smooth between varices. Axial ornamentation on each teleoconch whorl of six to seven rounded varices, the earliest of which extend onto protoconch. With each successive whorl varices larger and more adaperturally recurved, with adapertural surface undulated by spiral cords (note: most varical ornamentation developed only in intritacalx, exposed shell with only heavy rounded ridges). Spire low, whorls greatly inflated, suture deeply impressed. Varices from each successive whorl crossing suture and abutting varices of previous whorl. Aperture oval, inner lip slightly appressed at posterior end, free-standing at anterior end; both inner and outer lips smooth. Siphonal canal moderately long, with flaring bulge about midway between base of body whorl and tip of canal. Each siphonal canal welded to previous one, with spiral twist developing on canal resulting from formation of successive varices (although principally developed in intritacalx, weakly present in exposed shell). Entire external surface (excluding protoconch) of shell covered by a thick chalky layer (intritacalx) marked with



Text-figure 4. *Dermomurex (Viator) pasi* Vokes, n. sp. WAM 237- 93 (holotype). Detail of intritacalx (X 20).



Text-figure 5. *Dermomurex (Viator) antonius* Vokes. WAM 2843-67 (paratype). Detail of intritacalx (X 20).

faintly punctate spiral lines and very weak axial lines, giving linen-like texture to surface. Deep pits developed in intritacalx at irregular intervals in a checkerboard pattern, especially along abapertural margin of varices.

Type material: Holotype: WAM 237-93; length 18.0 mm, width 10.9 mm, collected by Johan Pas (text-figures 2, 4). Paratype: WAM 236-93; height 14.9 mm, diameter 8.5 mm, collected by Johan Pas (text-figure 3).

Three additional unfigured paratypes in Vokes Collection: two from Broome (one from Mr Pas, length 12.1 mm; the second bought from a U.S. dealer as "*D. antonius*," length 11.6 mm); the third (length 16.3 mm) collected in material dredged to build boat-ramp at Cossack, W.A.

Type locality: Off Broome, W.A., 12 meters, in sand and gravel, with scuba.

Discussion: On a recent visit to Australia I was given a specimen of what was said to be *D. (V.) antonius*, collected at Broome. My first reaction was that the shell was pathologic, with the siphonal canal strangely distorted. But then I received an additional two examples, also from Broome, both with the same twisted canal. It became obvious that they represent a new species, which, although similar to *D. antonius*, is consistently different in having a peculiarly distorted siphonal canal, in contrast to the straight canal of *D. antonius* and the other species included in *Viator*.

The distorted canal of this new species, although not completely straight, as in other species of the subgenus, nevertheless is more akin to *Viator* than to the short, recurved canal of *Takia*. In *Takia* the height of the spire and the length of the siphonal canal are approximately the same. In *Viator*, the spire is relatively lower, the siphonal canal relatively longer, and the aperture relatively smaller, giving a very different appearance to the shell.

Dermomurex (*Viator*) *pasi* has only a subgeneric resemblance to the previously described *D. antonius*. Differences between the two species include not only the twisted siphonal canal of *D. pasi* but also the larger size of *D. antonius*. The holotype of *D. antonius* (text-fig. 1) is 25.7 mm in height; the holotype (text-figure 2) of *D. pasi* is 18 mm. Text figures 2a, 2b are the same magnification (X 2) as the holotype of *D. antonius* so that one may compare the two shells without bias (text-figures 2c, 2d, and 3 are more enlarged to show details of the shells). The varices of *D. pasi* are more deeply excavated on the abapertural side and the spire is lower.

In addition to these macroscopic differences the intritacalx of the two species is markedly different: that of *D. pasi* (text-figure 4) has almost a checkerboard appearance, with square pits regularly distributed over the surface, which is also marked by finely punctate spiral lines; that of *D. antonius* (text-figure 5) lacks the square openings and has more coarsely punctate spiral lines.

In addition to these live-taken shells, a beach-worn specimen was collected at Cossack, W.A. (near Karratha), indicating that the species has a larger geographic range than just the Broome area. I suspect if collectors will examine their specimens of "*D. antonius*" several more examples of this new species will be recognized.

ACKNOWLEDGEMENTS

All material in the type lot of this new species (except the Cossack one) was collected by Johan Pas, formerly of Broome, but now living in Albany, W.A. The holotype, although collected by Mr Pas, was given to me by his friend, Alan Longbottom, of Grass Patch, W.A. and two smaller examples came directly from Mr Pas. It gives me great pleasure to name this new species in his honor and I am extremely grateful to both gentlemen for the specimens upon which this new species is based.

LITERATURE CITED

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